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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/485,017	04/06/2000	YUICHI NAKAO	65296	1390

23872 7590 11/22/2002

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EXAMINER
DICKENS, CHARLENE

ART UNIT	PAPER NUMBER
2855	

DATE MAILED: 11/22/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

AK

Office Action Summary	Application No. 09/485,017	Applicant(s) NAKAO et al.
	Examiner Dickens	Group Art Unit 2855

—The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address—

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE -3- MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

☒ Responsive to communication(s) filed on 8-12-02 & 7-9-02.

☐ This action is **FINAL.**

☐ Since this application is in condition for allowance except for formal matters, **prosecution as to the merits is closed** in accordance with the practice under *Ex parte Quayle,* 1935 C.D. 1 1; 453 O.G. 213.

Disposition of Claims

☒ Claim(s) 1-19 is/are pending in the application.

Of the above claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1-19 is/are rejected.

☐ Claim(s) _____ is/are objected to.

☐ Claim(s) _____ are subject to restriction or election requirement

Application Papers

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119 (a)–(d)

☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)–(d).

☐ All ☐ Some* ☐ None of the:

☐ Certified copies of the priority documents have been received.

☐ Certified copies of the priority documents have been received in Application No. _____.

☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

*Certified copies not received: _____.

Attachment(s)

☒ Information Disclosure Statement(s), PTO–1449, Paper No(s). 15

☐ Interview Summary, PTO–413

☐ Notice of Reference(s) Cited, PTO–892

☐ Notice of Informal Patent Application, PTO–152

☐ Notice of Draftsperson's Patent Drawing Review, PTO–948

☐ Other _____

Office Action Summary

1. In view of the Appeal Brief filed on 8/12/02, PROSECUTION IS HEREBY REOPENED. New grounds of rejections are set forth below.

To avoid abandonment of the application, appellant must exercise one of the following two options:

(1) file a reply under 37 CFR 1.111 (if this Office action is non-final) or a reply under 37 CFR 1.113 (if this Office action is final); or,

(2) request reinstatement of the appeal.

If reinstatement of the appeal is requested, such request must be accompanied by a supplemental appeal brief, but no new amendments, affidavits (37 CFR 1.130, 1.131 or 1.132) or other evidence are permitted. See 37 CFR 1.193(b)(2).

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-3, 6, 8, 9, 11-15, and 17-19 are rejected under 35 U.S.C. 103(a) as being unpatentable over The Admitted Prior Art (APA) in view of FR 2598801 (FR '801). The APA discloses a Coriolis mass flow meter comprising: two, i.e., first and second (instant claim 11), parallel curved flow tubes (1, 2) having base

plates (27, 28) fixedly fitted to them at the points serving as first vibration fulcrum; inlet side; outlet side; a drive unit 15, including a magnet and a coil (instant claim 15), for causing any one of said flow tubes to resonate with the other flow tube in an opposite phase with each other, and a pair of vibration sensors (16, 17) including a magnet and a coil (instant claim 15), disposed at symmetrical positions with respect to the mounting position of said drive unit, for sensing a phase difference proportional to Coriolis, i.e., the flow tubes vibrate toward and away from each other (instant claim 12); a meter body 34 holds connecting ports at both ends and the entire flow meter as serve as a second fulcrum; the sensors and the driver are disposed between the two flow tubes in such a manner as to be aligned with the central axes of the two flow tubes (Fig. 10) (instant claim 6); the sensors are arranged at secondary vibration modes of the first and second flow tubes. However, the APA does not teach an inlet side manifold and an outlet side manifold. FR '801 teaches an inlet side manifold 8 and an outlet side manifold (Fig. 5), the manifolds having spaced apart first and/or second ports (instant claims 11, 13, 14); wherein said inlet side manifold is smoothly curved from the inlet thereof, branching into two flow tubes while continuously reducing the total cross-sectional area of flow paths of said two flow tubes (Fig. 5); and flow paths of said outlet side manifold are

smoothly curved form the joint parts thereof with said flow tubes, joining said flow paths while continuously increasing the total cross sectional area (instant claims 2, 3, 18, 19) of said flow paths (Fig. 5), and leading to a fluid outlet for the purpose of providing dual vibration flow meter that is capable of improving the flow rate measurements of corrosive and viscous liquids or slurries. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have an inlet side manifold and an outlet side manifold, the manifolds having spaced apart first and/or second ports; wherein said inlet side manifold is smoothly curved from the inlet thereof, branching into two flow tubes while continuously reducing the total cross-sectional area of flow paths of said two flow tubes; and flow paths of said outlet side manifold are smoothly curved form the joint parts thereof with said flow tubes, joining said flow paths while continuously increasing the total cross sectional area of said flow paths, and leading to a fluid outlet in the APA as taught by FR '801 for the purpose of providing dual vibration flow meter that is capable of improving the flow rate measurements of corrosive and viscous liquids or slurries.

4. Claims 4, 5 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over the APA, as modified, as applied to claims 1 and 11 above, and further in view of US 5,425,277.

Claims differ with the recitation of a U-shaped meter body. US 5,425,277 discloses a U-shaped meter body (Fig. 1) for the purpose of supporting and restraining lateral movements of flow tubes. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have included in the APA, as modified, a U-shaped meter body as suggested by US 5,425,277 for the purpose of supporting and restraining lateral movements of flow tubes.

5. Claims 7 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over the APA, as modified, as applied to claim 1 above, and further in view of JP 9250940. Claims differ from the APA, as modified, with the recitation of a flexible printed circuit board bent symmetrically. JP 9250940 discloses the use of a flexible printed circuit board 9 bent symmetrically for the purpose of providing a Coriolis flow meter wherein vibration attenuation of a vibrating tube by wiring is lessened and connection of the wiring is held stable for a long period. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have included in the APA, as modified, a flexible printed circuit board bent symmetrically as suggested by JP 9250940 for the purpose of providing a Coriolis flow meter wherein vibration attenuation of a vibrating tube by wiring is lessened and connection of the wiring is held stable for a long period.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Examiner Dickens whose telephone number is (703) 305-7047. The fax numbers are (703) 305-3431 and (703) 305-3432.

cd/dickens
November 17, 2002

HEZRON WILLIAMS
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